

Application No. 10/764,203
Amendment Dated March 30, 2006
Reply to the Office Action dated January 6, 2006
Attorney Docket No. 3498-00097

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Please cancel claim 10, and rewrite claims 1, 9, 13, 17 and 23 as follows:

1. (Currently Amended) A pallet construction for an annular cooler forming a gas permeable surface for supporting and transporting material during processing thereof, the pallet construction comprising:

a pallet deck having a series of substantially parallel rows of spaced apart elongated slots, each of the slots in a row being staggered with respect to the slots in an adjacent row in the series, wherein the slots define apertures through the pallet deck, said pallet deck having a top surface and a bottom surface; and

a support frame supporting the pallet deck, the support frame includes a framework comprised of an arcuate-shaped outer frame member, an arcuate-shaped inner frame member concentric with outer frame member, a leading frame member extending between the outer frame member and the inner frame member, a trailing frame member extending between the outer frame member and the inner frame member, a plurality of spaced apart horizontal brace members disposed between the leading and trailing frame members and extending between the outer frame member and the inner frame member, and a plurality of angular cross braces which interconnect the inner, outer, leading and trailing frame members with the horizontal brace members and intersect said horizontal brace members at an acute angle, said horizontal brace members and said angular cross braces affixed to and engaging said bottom surface of said pallet deck;

an outer bushing extending between a pair of said horizontal brace members, and disposed adjacent to and inwardly of said outer frame member;

an inner bushing extending between said pair of horizontal brace members and disposed adjacent to and outwardly of said inner frame member;

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said inner and outer bushings defining an axis of rotation that is offset from a centerline of the pallet construction defined by the midpoints of said inner and outer frame members whereby said pallet deck and support frame may be tilted to discharge a load;

one of said cross braces being in a W-like configuration and extending from a corner formed by the outer and leading frame members to one of said pair of horizontal brace members at the location of said outer bushing and then to the midpoint of said leading frame member and then to said one of said pair of horizontal brace members at the location of said inner bushing and then to a corner formed by the inner and leading frame members; and

another of said cross braces being in a W-like configuration and extending from a corner formed by the outer and trailing frame members to the other of said pair of horizontal brace members at the location of said outer bushing and then to the midpoint of said trailing frame member and then to said other of said pair of horizontal brace members at the location of said inner bushing and then to a corner formed by the inner and trailing frame members.

2. (Original) The pallet construction of claim 1, wherein the elongated slots in each of the rows in the series are longitudinally aligned.

3. (Original) The pallet construction of claim 1, wherein the support frame comprises at least one horizontal brace member extending substantially transverse to the rows of slots.

4. (Canceled)

5. (Previously Presented) The pallet construction of claim 1, wherein each of the plurality of horizontal brace members extends substantially transverse to the rows of slots and each of the plurality of angular brace members intersects with at least one of the horizontal brace members.

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6. (Original) The pallet construction of claim 1, wherein the pallet deck comprises a relatively flat plate member having an arcuate-shaped outer edge, an arcuate-shaped inner-edge concentric with said outer edge, a leading edge and a trailing edge configured so that said deck forms a truncated circular segment.

7. (Original) The pallet construction of claim 1, further comprising: at least one shaft extending from the support frame, the shaft for coupling the pallet construction to a conveyor frame.

8. (Original) The pallet construction of claim 7, wherein the support frame further comprises a series of aligned bearings for supporting at least one shaft.

9. (Currently Amended) The pallet construction of claim 1, further comprising:

two shafts extending respectively through said outer and inner bushings in opposite directions from the support frame, the shafts for coupling the pallet construction to a conveyor frame.

10. (Canceled)

11. (Original) The pallet construction of claim 1, further comprising: means for movably supporting the support frame in a conveyor system.

12. (Original) The pallet construction of claim 1, wherein the support frame is attached to the pallet deck by bevel welding.

13. (Currently Amended) A pallet construction for an annular cooler forming a gas permeable surface for supporting and transporting material during processing thereof, the pallet construction comprising:

a pallet deck having a series of substantially parallel rows of spaced apart longitudinally aligned elongated slots, each of the slots in a row being staggered with respect to the slots in an adjacent row in the series, wherein the slots define apertures through the pallet deck, said pallet deck having a top surface and a bottom surface;

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a support frame supporting the pallet deck, the support frame includes a framework comprised of an arcuate-shaped outer frame member, an arcuate-shaped inner frame member concentric with outer frame member, a leading frame member extending between the outer frame member and the inner frame member, a trailing frame member extending between the outer frame member and the inner frame member, a plurality of spaced apart horizontal brace members disposed between the leading and trailing frame members and extending between the outer frame member and the inner frame member, and a plurality of angular cross braces which interconnect the inner, outer, leading and trailing frame members with the horizontal brace members and intersect said horizontal brace members at an acute angle, said horizontal brace members and said angular cross braces affixed to and engaging said bottom surface of said pallet deck; and

an outer bushing extending between a pair of said horizontal brace members, and disposed adjacent to and inwardly of said outer frame member;

an inner bushing extending between said pair of horizontal brace members and disposed adjacent to and outwardly of said inner frame member;

said inner and outer bushings defining an axis of rotation that is offset from a centerline of the pallet construction defined by the midpoints of said inner and outer frame members whereby said pallet deck and support frame may be tilted to discharge a load;

one of said cross braces being in a W-like configuration and extending from a corner formed by the outer and leading frame members to one of said pair of horizontal brace members at the location of said outer bushing and then to the midpoint of said leading frame member and then to said one of said pair of horizontal brace members at the location of said inner bushing and then to a corner formed by the inner and leading frame members; and

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another of said cross braces being in a W-like configuration and extending from a corner formed by the outer and trailing frame members to the other of said pair of horizontal brace members at the location of said outer bushing and then to the midpoint of said trailing frame member and then to said other of said pair of horizontal brace members at the location of said inner bushing and then to a corner formed by the inner and trailing frame members; and

opposing shafts coupled to and extending respectively through said outer and inner bushings in opposite directions from the support frame, wherein the two shafts are offset from a-the centerline of the pallet construction.

14. (Original) The pallet construction of claim 13 wherein the pallet deck comprises a relatively flat plate member having an arcuate-shaped outer edge, an arcuate-shaped inner-edge concentric with said outer edge, a leading edge and a trailing edge configured so that said deck forms a truncated circular segment.

15. (Canceled)

16. (Previously Presented) The pallet construction of claim 13 wherein the area defined by the elongated slots comprises from about 25% to about 40% of the surface area of the pallet deck.

17. (Currently Amended) An annular cooler having a conveyor system forming a gas permeable surface for supporting and transporting material during cooling thereof, the conveyor system comprising:

inner and outer rail members, and

a plurality of aligned pallet constructions supported by the inner and outer rail members and movable along a circular path defined by the inner and outer rail members,

wherein each of the plurality of aligned pallet constructions comprises a pallet deck having a series of substantially parallel rows of spaced apart elongated slots, each of the slots in a row being staggered with respect to the slots in an adjacent row in the series, wherein the slots define apertures through the pallet deck, said pallet deck

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having a top surface and a bottom surface, and a support frame supporting the pallet deck, the support frame includes a framework comprised of an arcuate-shaped outer frame member, an arcuate-shaped inner frame member concentric with outer frame member, a leading frame member extending between the outer frame member and the inner frame member, a trailing frame member extending between the outer frame member and the inner frame member, a plurality of spaced apart horizontal brace members disposed between the leading and trailing frame members and extending between the outer frame member and the inner frame member, and a plurality of angular cross braces which interconnect the inner, outer, leading and trailing frame members with the horizontal brace members and intersect said horizontal brace members at an acute angle, said horizontal brace members and said angular cross braces affixed to and engaging said bottom surface of said pallet deck;

an outer bushing extending between a pair of said horizontal brace members, and disposed adjacent to and inwardly of said outer frame member;

an inner bushing extending between said pair of horizontal brace members and disposed adjacent to and outwardly of said inner frame member;

said inner and outer bushings defining an axis of rotation that is offset from a centerline of the pallet construction defined by the midpoints of said inner and outer frame members whereby said pallet deck and support frame may be tilted to discharge a load;

one of said cross braces being in a W-like configuration and extending from a corner formed by the outer and leading frame members to one of said pair of horizontal brace members at the location of said outer bushing and then to the midpoint of said leading frame member and then to said one of said pair of horizontal brace members at the location of said inner bushing and then to a corner formed by the inner and leading frame members; and

another of said cross braces being in a W-like configuration and extending from a corner formed by the outer and trailing frame members to the other of said pair of

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horizontal brace members at the location of said outer bushing and then to the midpoint of said trailing frame member and then to said other of said pair of horizontal brace members at the location of said inner bushing and then to a corner formed by the inner and trailing frame members.

18. (Original) The annular cooler of claim 17, wherein the elongated slots in each of the rows in the series are longitudinally aligned.

19. (Original) The annular cooler of claim 17, wherein the support frame comprises at least one horizontal brace member extending substantially transverse to the rows of slots.

20. (Canceled)

21. (Previously Presented) The annular cooler of claim 17, wherein each of the plurality of horizontal brace members extends substantially transverse to the rows of slots and each of the plurality of angular brace members intersects with at least one of the horizontal brace members.

22. (Original) The annular cooler of claim 17, wherein the first and second rail members comprise inner and outer concentric annular rail members which support the support frame.

23. (Currently Amended) The annular cooler of claim 17, further comprising opposing shafts ~~coupled to~~extending respectively through said outer and inner bushings from the support frame, the opposing shafts coupling the support frame to the inner and outer rail members, respectively.